CLAIMS:

1. A method of moulding a contact lens using a male mould and a female mould, the method comprising the steps of:

(a) introducing lens-forming material in a liquid state into the female mould;

(b) inserting the male mould into the female mould to a first relative position to form an assembly of the male and female moulds in which the moulds together define a moulding cavity and a reservoir for lens-forming material;

(c) during the insertion of the male mould to the first position thereof expelling part of the liquid state lens-forming material from the moulding cavity to the reservoir;

(d) initiating curing of the lens-forming material in the moulding cavity whilst keeping open a pathway between the moulding cavity and the reservoir so as to allow lens-forming material to flow from the reservoir into the moulding cavity to compensate for shrinkage of the lens-forming material during curing;

(e) applying an external force on the assembly of moulds to insert the male mould further into the female mould to thereby close the moulding cavity and to seal off the moulding cavity from the reservoir;

(f) allowing the lens-forming material to complete transformation to a final, glassy solid state within the sealed moulding cavity; and

(g) removing the formed contact lens from the assembly of male and female moulds after the lens-forming

material has reached the final glassy solid state thereof.

2. A method as claimed in claim 1 wherein:

the assembly of male and female moulds is heated to initiate curing of the lens-forming material.

3. A method as claimed in claim 1 or 2 wherein:

the male and female moulds are heated at least until the closing of the mould cavity and prior to the closing of the mould cavity the lens-forming material is kept at a temperature above the glass transition temperature of the lens-forming material;

the lens-forming material is cooled below the glass transition temperature in the closed moulding cavity; and

removing the formed contact lens from the mould cavity occurs after the lens-forming material has cooled below the glass transition temperature thereof.

4. A method as claimed in any one of claims 1 to 3 wherein a thickener is added to the lens-forming material to increase the viscosity of the lens-forming material.

5. A method as claimed in any one of claims 1 to 4 which include the steps of:

forming the male and female moulds by an injection moulding process and using each pair of injection moulded male and female moulds only once in the formation of a single contact lens.

6. A method as claimed in claim 5 wherein:

a plurality of pairs of male and female moulds are injection moulded;

the liquid state lens forming material is deposited in the plurality of female moulds;

the plurality of male moulds are inserted into the female moulds, each being inserted to a first position in a respective female mould, to form a plurality of assemblies of male and female moulds;

the plurality of male moulds are all simultaneously displaced from the first positions thereof to the second positions thereof.

7. A method as claimed in any one of the preceding claims wherein:

the assembly(ies) of moulds is/are placed in a curing oven;

timing means is used to time duration of residence of the moulds in the curing oven; and

after a first measured time period the external force is applied to each male mould to move each male mould from the first position thereof to the second position thereof.

8. Apparatus for moulding a contact lens comprising:

a male mould;

a female mould;

insertion means for inserting the male mould into the female mould to a first position relative to the female mould thereby to form an assembly of the male and female moulds in which there is defined a moulding cavity for retention of lens-forming material and a reservoir for storing an excess of lens-forming material, the mould cavity and the reservoir being in fluid communication when the male

mould is in the first relative position; and ram means for applying an external force on the assembly of male and female moulds to insert the male mould further into the female mould to a second position relative to the female mould, in which the mould cavity is closed and sealed off from the reservoir.

9. Apparatus as claimed in claim 8 wherein the reservoir can receive an excess of liquid state lens forming material displaced as the male mould is inserted into the female mould to the first relative position thereof.

10. Apparatus as claimed in claim 8 or 9 wherein the male and female moulds are shaped to provide the closed moulding cavity with an edge region triangular in cross-section.

11. Apparatus as claimed in claim 8, 9 or 10 wherein the female mould is provided with an annular lip.

12. Apparatus as defined in claim 11 wherein said annular lip lies in a plane extending radially of the moulding cavity.

13. Apparatus as claimed in claim 12 wherein said male mould is provided with a frusto-conical region adjacent a spherical central region of the mould and the frusto-conical region abuts the annular lip of the female mould when the male mould is in the second position thereof.

14. Apparatus as claimed in any one of claims 8 to 13 wherein the male mould has a cylindrical portion and the female mould has a matched cylindrical portion and the

matched cylindrical portions co-operate to ensure the correct location of the male mould in the female mould.

15. Apparatus as claimed in any one of claims 8 to 13 wherein each of the male and female moulds is an injection moulded mould and the assembly of moulds is for formation of a single contact lens.

16. Apparatus as claimed in any one of claims 8 to 15 comprising a curing oven in which the assembly of male and female moulds is locatable.

17. Apparatus as claimed in claim 16 comprising timing means for timing duration of residence of the assembly of male and female moulds in the curing oven and triggering means for actuating the application of external force by the ram means when a chosen duration of residence is reached.

18. Apparatus as claimed in claim 17 wherein the ram means comprises a mass retention means for holding a mass in an elevated position above the male mould, which retention means releases the mass when triggered by the triggering means, the mass then falling to apply the external force on the assembly of moulds.

19. Apparatus as claimed in claim 18 which further comprises a lifting mechanism for lifting the mass to the elevated position thereof.

20. Apparatus as claimed in any one of claims 16 to 19 wherein the base of the curing oven is provided with a plurality of rows of rollers, wherein at least one roller in

one of said rows is displaced vertically upwardly of the rollers in the other row(s).

21. Apparatus as claimed in claim 20 wherein the rollers are roller-balls.

22. Apparatus as claimed in claim 20 or claim 21 comprising a tray for transporting the assembly of male and female moulds in the curing oven, the tray having a recess formed in the underside thereof for receiving at least a portion of each roller in said row of rollers displaced vertically upwardly of the other row(s) of rollers.

23. Apparatus as claimed in claim 22 wherein the tray has at least one integrated heating element for controlling the temperature of the tray.

24. A method of moulding a contact lens comprising steps substantially as hereinbefore described with reference to the accompanying drawings.

25. Apparatus for moulding a contact lens substantially as hereinbefore described with reference to and as shown in the accompanying drawings.